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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/557,156	04/25/2000	Hidekazu Kikuchi	8663-0001-2X	9303

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EXAMINER

BERMAN, JACK I

ART UNIT PAPER NUMBER

2881

DATE MAILED: 12/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/557,156

Applicant(s)

KIKUCHI, HIDEKAZU

Examiner

Jack I. Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-42 is/are pending in the application.
- 4a) Of the above claim(s) 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 19-26, 28-32 and 34-39 is/are rejected.
- 7) ☒ Claim(s) 27, 33, 40-42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 13, 14, 19-24, 28-32, and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoppe in view of Auslander et al. As was explained in the previous Office action, Hoppe discloses a method for transporting an object (object carrier 18) to or from a stage (rod 20) comprising supporting one surface of the object on a plurality of support members (grippers or jaws 25, 26, 27, 28), loading the object onto the stage, and withdrawing the plurality of support members to the other side of the object (see line 39 in column 5 through line 11 in column 6). Lines 27-59 in column 4 teach how object stage 6 and rotatable insert 13 can be used to move the cartridge containing the support members 25-28. This would inherently move all the support members in a common plane perpendicular to the vertical axis along which the object is moved. This movement includes rotation around an axis perpendicular to the moving plane. The support members also move, either simultaneously or sequentially, in linear movements in directions approaching/withdrawing from the object (see line 39 in column 5 through line 11 in column 6). At lines 44-46 in column 5, Hoppe teaches that apertures may be provided in the object to receive the support members. At lines 12-15 in column 5, Hoppe teaches that means are provided to raise the object cartridge 14, including support members 25-28 that form part of it, so that the support members are lifted clear of the object, i.e. the support members from one "surface side" of the object carrier 18 to the other. While Hoppe mentions, at lines 44-46 in column 5, apertures to receive the ends of the grippers 25-28, the patent does not

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mention the orientation of these apertures. It would have been an obvious design choice having no functional significance to provide these apertures in the direction that moves the grippers from one side of the object to the other. In this case, the apertures would have to be big enough to permit the grippers to move so that they could grab and release the object. With regards to claim 28, while Hoppe does not specify any particular driving means to move the support members from one side of the object to the other, it would have been obvious to a person having ordinary skill in the art to provide a cover around this driving means to prevent lubricants used by the driving means from contaminating the chamber containing the specimen. While the Hoppe apparatus is disclosed as being used to transport an object in an electron microscope, Auslander et al. teaches, at line 66 in column 6 through line 5 in column 7, teaches that the stages used to position objects in an electron microscope can also be used to position objects or masks in lithography equipment, including electron beam lithography systems. It would therefore have been obvious to a person having ordinary skill in the art to use Hoppe's positioning system to position the mask in a lithography system wherein recess 23 (which, by definition, constitutes a "hole portion"), with its plate shaped portion 32 in the bottom of the recess to act as a mounting surface, serves as the exposure position. At lines 36-37 in column 10, Hoppe teaches to use light-optical interference methods (i.e. interferometers) to monitor the position of the stage as it moves in a two-dimensional plane from the loading position to the observation (or exposure) position. It would have been obvious to a person having ordinary skill in the art to provide extra interferometers if the change of position of the stage exceeds the range of one of the interferometers. At lines 13-46 in column 8, Hoppe further teaches to move the stage ("rod" or "shaft" 20) in X and Y directions, i.e. two-dimensionally, to adjust the position of the hole

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portion 18 in which the surface that supports an object is located. This embodiment is illustrated in Figure 12.

Claims 12, 15, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoppe and Auslander et al. as applied to claims 1-11, 13, 14, 19-24, 28-32, and 34-39 above, and further in view of Faure et al. Faure et al. teaches that lithography masks usually comprise a circuit pattern formed in a layer 26 and a support ring 24 that acts as a frame to rigidly support the mask. It would therefore further have been obvious to a person having ordinary skill in the art to use Hoppe's positioning system to position Faure et al.'s mask in the manner suggested by Auslander et al.

Claims 27, 33, and 40-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As was explained in the previous Office action, the prior art does not suggest to arrange an elastic member on the contact portion of Hoppe's support members or a mark detection system on the side of the optical system at the transportation system of the Hoppe apparatus to detect a positioning mark on the object before it is loaded onto the stage.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

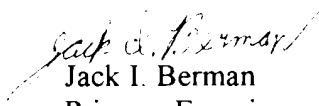
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack I. Berman whose telephone number is (703) 308-4849. The examiner can normally be reached on M-F (8:30-6:00) with every second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
Jack I. Berman  
Primary Examiner  
Art Unit 2881

jb  
December 20, 2002